

ARNOLD ARBORETUM

HARVARD UNIVERSITY



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Prostrate Junipers. This general name is given to a number of low-growing Junipers with wide-spreading branches lying close to the ground and forming broad mats. For covering banks, the margins of ponds or beds of larger conifers they are useful and are much used in some parts of the country, although there is still a great deal of confusion in commercial nurseries about the identity and correct names of these Junipers.

The prostrate Red Cedar. This is perhaps the handsomest of all these plants. On exposed parts of the wind-swept cliffs near Ogunquit and at Kennebunkport, Maine, this Juniper grows only about two feet high, with branches extending over a diameter of eighteen or twenty feet, their ends lying flat on the ground. At Kennebunkport, in a position not fully exposed to the wind, one of these plants has formed a short stem about two feet high from the summit of which start branches spreading horizontally and forming a broad head. Whether the dwarf habit of these Junipers is due to the exposed position where they grow or not cannot be determined until plants are raised from seeds produced by them, for it is possible such seedlings may assume the ordinary upright habit of this tree. The fact that such prostrate plants sometimes occur at a distance from the coast, as in Lexington, Massachusetts, indicates perhaps that the prostrate form has become fixed, as it is in the case of prostrate forms of some other Junipers. Dwarf forms of *Juniperus virginiana* are described in German books on trees under the name of *Juniperus virginiana repens* or *J. virginiana horizontalis*, but the Arboretum has no information about these plants and it is impossible to determine if they are

similar to the prostrate plants of the Maine coast which possibly are still without a name. In this country the prostrate *Juniperus virginiana* is not known in cultivation, and in this Arboretum there are only a few small grafted plants of the tall-stemmed specimen at Kennebunkport. This Juniper well deserves the attention of the lovers of hardy conifers.

Juniperus communis, var. depressa. This is a dwarf form of the common Juniper and forms broad masses of stems ascending from a prostrate base and covered with linear, sharp-pointed, dark blue-green leaves marked on the upper surface by broad white bands. This dwarf Juniper is very common in the northeastern states on dry gravelly hills and in old pastures, sometimes almost entirely occupying the ground to the exclusion of other plants. In nurseries this plant is sometimes called *Juniperus canadensis* or *J. nana canadensis*. The erect-growing form, which is more common in Europe than in the United States, very rarely occurs in New England and sometimes grows on the lower slopes of the Appalachian Mountains as far south as North Carolina. On the hills in the neighborhood of the Delaware Water Gap in Pennsylvania this upright form seems more abundant than in other parts of the country and to be the prevailing Juniper. Erect forms of *J. communis*, known in gardens as the Swedish or Irish Junipers, are often planted in the middle states but are not very satisfactory in Massachusetts. There is a form of the variety *depressa* (var. *aurea*) with yellow-tipped branches which has been a popular garden plant in the United States for several years. The variety *montana* is the dwarfiest of the prostrate forms of *J. communis*, rarely growing more than two feet high and forming dense mats of prostrate stems. From variety *depressa* it may also be distinguished by its shorter and broader incurved leaves. This little plant grows on the Atlantic coast from Maine to Newfoundland, on the Rocky Mountains, in Alaska, and through northern Asia and Europe. It is sometimes called *Juniperus nana*, *J. alpina* and *J. sibirica*. On the high mountains of Japan there is a form of *J. communis* (var. *nipponica*) with wide-spreading and ascending or often prostrate stems which is similar to the variety *montana*. Nothing is known of the value of this Japanese variety in gardens here as it does not appear to have been introduced until Wilson sent seeds to the Arboretum two years ago from which only a single plant has yet appeared.

Juniperus horizontalis. This is one of the handsomest of the prostrate Junipers and an excellent garden plant. It has procumbent and prostrate stems which often develop roots and sometimes extend over broad areas. The leaves are scale-like, acute, blue-green or steel-blue, and the fruits are bright blue and ripen at the end of the second season. This is a widely distributed plant from the coast of Maine to British Columbia, ranging south to Massachusetts, western New York, Illinois and Montana. It grows on sea cliffs, gravelly slopes, or in western New York in deep, often inundated swamps. For many years, until it was found to be distinct from the European Juniper, this plant was known as *Juniperus Sabina* var. *procumbens*. It has also been called *J. prostrata* and *J. repens*. There is a form of this Juniper (var. *Douglasii*) with steel blue foliage, turning purple in the

autumn, which grows on the sand dunes of Lake Michigan and is known in gardens as the Waukegan Prostrate Juniper. There are large beds of *J. horizontalis* in the general Juniper Collection.

Juniperus procumbens. This is the best known of the prostrate Junipers which Japan has sent to the gardens of the west. It is a plant with wide-spreading procumbent stems, blue-green, sharply pointed leaves marked on the upper surface by two white lines. The fruit is not known. This Juniper finds a place in nearly every Japanese garden, but it must be a rare and probably local plant in its distribution as a wild plant was not seen by Wilson during his extended travels in Japan. It is said to have been introduced into Great Britain before the middle of the last century but was soon lost from European gardens until it was reintroduced in 1893. This Juniper is largely used as a garden plant in California where it is imported from Japan, and less commonly in the eastern states. It is perfectly hardy and well established in the Arboretum, and can be seen with the other Junipers. This Japanese Juniper is closely related to the prostrate Juniper of western China and the Himalaya *J. squamata*, a plant with awl-shaped, sharply pointed leaves in clusters of three, and dark purple-black berries. Plants from western China can be seen in the Arboretum.

Juniperus chinensis, var. Sargentii. This dwarf form of a wild tree of China and Japan appears to have been first collected by Professor Sargent near Mororan in southern Hokkaido in the autumn of 1892, and the plants raised from the seeds which he collected at that time are probably the only ones in cultivation. This Juniper forms a low dense mat of wide-spreading branches covered with small, dark green, scale-like leaves, mixed with pointed ones. It finds its most southern home on the high mountains of northern Hondo; it is more abundant in Hokkaido where it sometimes descends to the sea-level and ranges northward to Saghalin and the more southern Kurile Islands. In the Arboretum it is now the handsomest of the prostrate Junipers. It can be seen here to advantage on the Hemlock Hill Road opposite the Laurels where several plants form a large mass and show considerable seminal variation. There are also three large plants on the eastern slope of the knoll on which the general Juniper Collection is planted.

Juniperus conferta, which has been called *J. litoralis*, is also a Japanese species ranging northward from the southern island of Tanegashima to Saghalin and to the shores of the Sea of Okhotsk. The sand dunes of Hakodate Bay in southern Hokkaido are covered with the long prostrate stems of this plant which root freely as they grow and extend over broad areas. The leaves are thickly crowded, straight, sharp-pointed, concave, pale above and dark below. The fruit is three-seeded and ripens at the end of the second year. Although this Juniper has been known to botanists for more than fifty years it has never been cultivated until Wilson sent seeds from Japan to the Arboretum two years ago. From this seed a number of plants have been raised; they are doing well and there is reason to hope that this plant will soon be better known in eastern gardens. In northern Japan it grows on the sandy seashore with *Rosa rugosa*, which is such a good plant in the most exposed places on the New England coast, and it seems reason-

able to expect that this Juniper may prove the most valuable plant which has yet been tried to hold the drifting sands of our eastern coast.

Juniperus Sabina. The dwarfest of all the prostrate Junipers in the Arboretum collection is a form of this European species with branchlets ascending only a few inches from prostrate stems and covered with dark blue-green scale-like leaves. The right name for this little plant is probably var. *cupressifolia*; another name is var. *nana*. A better known variety of *Juniperus Sabina* is the var. *tamariscifolia* from the mountains of central and southern Europe. This is a dwarf plant with procumbent or rarely ascending branches and needle-shaped, slightly incurved, dark green leaves marked on the upper surface with a white line.

Autumn colors in the Arboretum have been at their best this week, although the leaves of many plants have already fallen and those of many others, especially of the trees and shrubs of eastern Asia, are still as green as they were at midsummer. Some of the most brilliant plants during the week have been individuals of the White Oak (*Quercus alba*), the leaves of other individuals being still entirely green; the Tupelo or Sour Gum (*Nyssa sylvatica*), of which there are a number of plants by the pond near the junction of the Meadow and Bussey Hill Roads; the American Smoke-tree (*Cotinus americanus*); the Fragrant Sumach (*Rhus canadensis* or as it has been often called, *R. aromatica*), which has been largely used as a border plant along the drives; many species of *Crataegus* on the eastern slope of Peter's Hill; the curious Japanese Apple (*Malus Tschonoskii*); the Tulip-tree (*Liriodendron Tulipifera*) which is always splendid in its golden autumn dress; the Black Haw of the southern woods with its dark red leaves and fruit just turning from white to dark blue; the Sweet Gum (*Liquidambar Styraciflua*), with its star-shaped leaves turning scarlet and yellow. In early spring the Arboretum owes much to the flowers of one of the native species of Juneberry (*Amelanchier oblongifolia*) which has been largely planted along the drives where there are now many large specimens. During the past week these plants have been as beautiful and conspicuous as they were in May, for the leaves have turned the color of old gold and have retained this color for several days. All the American species of *Amelanchier* are beautiful spring-flowering plants, and although they do not remain many days in flower no other shrubs can be more safely used to enliven wood and swamp borders in the northern states. The bright scarlet of the leaves of the Highbush Blueberry (*Vaccinium corymbosum*) is not now surpassed in brilliancy by that of any other plant in the Arboretum. Attention has often been called in these Bulletins to the value of this native shrub for garden decoration. Fortunately it was early planted in large numbers in the Arboretum shrubbery and many of the plants have now grown to a good size and show their value. As an ornamental plant this Blueberry has everything to recommend it. The habit is excellent; it blooms freely and the flowers are handsome; they are followed by large dark blue fruits of the best quality, and if for no other reason it deserves a place in any garden for the late and splendid colors of its dying leaves. A number of plants at the entrance of Azalea Path opposite the Bussey Hill Overlook show the different shades of color the leaves assume at the end of October.